CHARGE NUMBER: 1708

PROJECT TITLE: Physical and Chemical Properties of Tobacco

PERIOD COVERED: August 1-31, 1984

PROJECT LEADER: H.A. Hartung

DATE OF REPORT: August 4, 1984

Mechanical Properties of Tobacco:

Stress relaxation experiments were carried out on the Instron testing machine to compare expanded burley with expanded bright. Unexpanded samples of the same tobaccos were used as controls. Expansion increased the pressure-volume response, of course, but it did not change the relaxation spectrum. Burley showed much less tendency to relax than bright whether expanded or not.

Relaxation tests were also conducted on filler treated with a foam binder. The binder had no effect on either the pressure or the relaxation rates. (Reported by M.E. Counts)

Effect of Bed Depth on Reordering Kinetics:

Measurements of OV and CV as a function of time have been made using bright tobacco. It was first equilibrated at 40%Rh and then moved to 70% for the test. The beds were 4 inches deep with screen separations one inch apart so that the effect of bed depth could be closely monitored. Thus far the OV and CV changes have shown essentially the same rate constants within the same layers. The interior layers changed about four times slower than the top layer. (Reported by M.J. Wood)

Solids in Casing Solutions:

We have started testing the hypothesis that the effective dry solids of casing solutions depends upon mixing effects with the substrate. If verified, this will reduce some of the systematic losses that are seen in the tobacco accountability system installed in the primary. We are running standard OV tests using tobaccos sprayed with carefully weighed quantities of casings. The effective dry solids of the casings are determined by comparing the residual dry weights with and without the additives.

In the first round of tests the casings were applied at about the same low levels as normally used in the factories. The results had large random deviations because the effective dry solids were derived as small differences between large numbers. The tests are being repeated with larger than normal application levels with the hope that this will give results with good confidence limits. (Reported by L.M. Trentham)

Reports

H.A. Hartung, "An APL-Database System that Evolved in an R&D Environment" draft manuscript prepared for publication.

M.E. Counts, "Stress-Relaxation of Binder-Treated Filler" memorandum to Jose Nepomuceno, August 30, 1984.

H A Hartung